

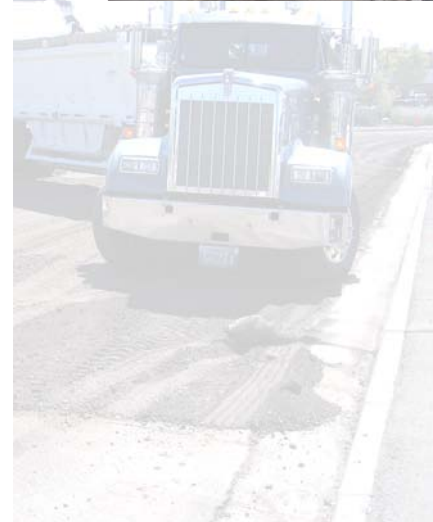
# MONTANA DEPARTMENT OF TRANSPORTATION

## HIGHWAY PROJECT COST ESTIMATING AND MANAGEMENT (HPCE)



CONTRACT#: 308059, RESEARCH PROJECT#: 8189

DATE: OCTOBER 15, 2007  
MONTHLY PROGRESS REPORT # 8  
PERIOD: OCTOBER 1- 31, 2007



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## INTRODUCTION

Sierra Transportation Engineers, Inc. (STE) is pleased to provide its eighth monthly progress report for Montana Department of Transportation (MDT) contract number 308059, titled "Highway Project Cost Estimating and Management (HPCE)." This monthly progress report covers the period October 1, 2007 to October 31, 2007.

The overall objective of this project is to develop a comprehensive document to determine the best practice of efficient highway cost estimating for Montana. Upon completion of this research, recommendations are to be made for improvements to the current cost estimation process.

The specific tasks identified in the project work plan are:

- Task 1 - MDT's Structure, Operations, and Current Process
- Task 2 - Critical Review of NCHRP 8-49 Literature Review
- Task 3 - Recommendations
- Task 4 - Consultant Visits and Schedule
- Task 5 - Develop Detailed Strategic Procedure
- Task 6 - Implementation Plan

The following paragraphs describe the work accomplished during this reporting period under each task.

## TASK 1 – MDT'S STRUCTURE, OPERATIONS, AND CURRENT PROCESS

During this reporting period, STE continued its efforts on understanding MDT's current structure, operations and procedures for cost estimation. A draft data request template called MDT HPCE data request template was created using MS Excel spreadsheets. STE provided an electronic copy of the template to MDT for review and comment on April 13, 2007. STE worked closely with the MDT Project Manager and Project Panel to customize the data request template to follow MDT practices. On July 3<sup>rd</sup>, 2007 STE finalized and submitted the data request template to MDT. The data request template is designed to provide project cost data to STE on at least 10 (and preferably 20) MDT projects. STE has requested data on projects of different types, categories, and from different districts. STE also asked for projects that were under, over, and close to the original base cost. The data received from MDT on October 19, 2007 did not have any project specific information as requested in the template. STE will rely on its subjective ranking survey results to analyze the importance of various risk factors on cost estimation accuracy. MDT has reported that the cost estimate errors are not due to estimators' inability to accurately estimate the known work related to a project, but rather due to not adequately identifying or accounting for unknown/unforeseen project costs at the time of nomination.

Members of STE team spent the week of September 17, 2007 at the MDT headquarters in Helena to interview MDT personnel involved in the cost estimation process. The main objective of those interviews was to capture how each MDT group deals with the unknown uncertainties (risks) during a life span of a project. During the month of October, STE initiated the compilation of interview information.

***Worked planned for next month***

STE will continue reviewing the current MDT structure, operations, and processes. STE will process the information gathered from the interviews with MDT personnel. The results of interviews will greatly assist STE in developing recommendations and a new strategic procedure for cost estimation.

**TASK 2 – CRITICAL REVIEW OF NCHRP 8-49 LITERATURE REVIEW**

During this reporting period, STE continued its review of NCHRP Report 574, "Guidance for Cost Estimation and Management for Highway Projects during Planning, Programming, and Preconstruction." STE has assembled its literature review findings in a draft document that will be included in the interim report to MDT.

***Worked planned for next month***

STE will continue reviewing the NCHRP 8-49 report and its literature review of various state agencies across the United States.

**TASK 3 – RECOMMENDATIONS**

During October, STE developed a database template using @RISK program for possible use by MDT as a risk analysis tool for future projects.

***Worked planned for next month***

STE will continue working on recommendations task during November.

**TASK 4 – CONSULTANTS VISITS AND SCHEDULE**

Members of STE team spent the week of September 17, 2007 at the in MDT headquarters in Helena to interview MDT personnel involved in cost estimation process.

***Worked planned for next month***

No visits are planned for November.

**TASK 5 – DEVELOP DETAILED STRATEGIC PROCEDURE**

STE has initiated the activities under this task using the findings of literature review, interviews, and statistical analysis during the month of October. The objective is to develop detailed procedure on improving initial cost estimation by capturing risk factors that impact project cost.

***Worked planned for next month***

During November, STE will continue its activities for Task 5.

## TASK 6 – IMPLEMENTATION PLAN

No work was scheduled nor conducted for this task during this reporting period. However, the scope of activities under this task was thoroughly discussed with the MDT project panel during the kick-off meeting.

### *Worked planned for next month*

No activity planned.

## PROJECT SCHEDULE AND FINANCIAL SUMMARIES

Figure 1 shows the project expenditures versus planned budget for each task. Figure 2 represents the cumulative project expenditures versus budget for the entire project to date.

All project activities are per schedule and the project is within planned budget. STE does not foresee any problems to report.

Figure 1. Expenditures Versus Planned Budget for Each Task

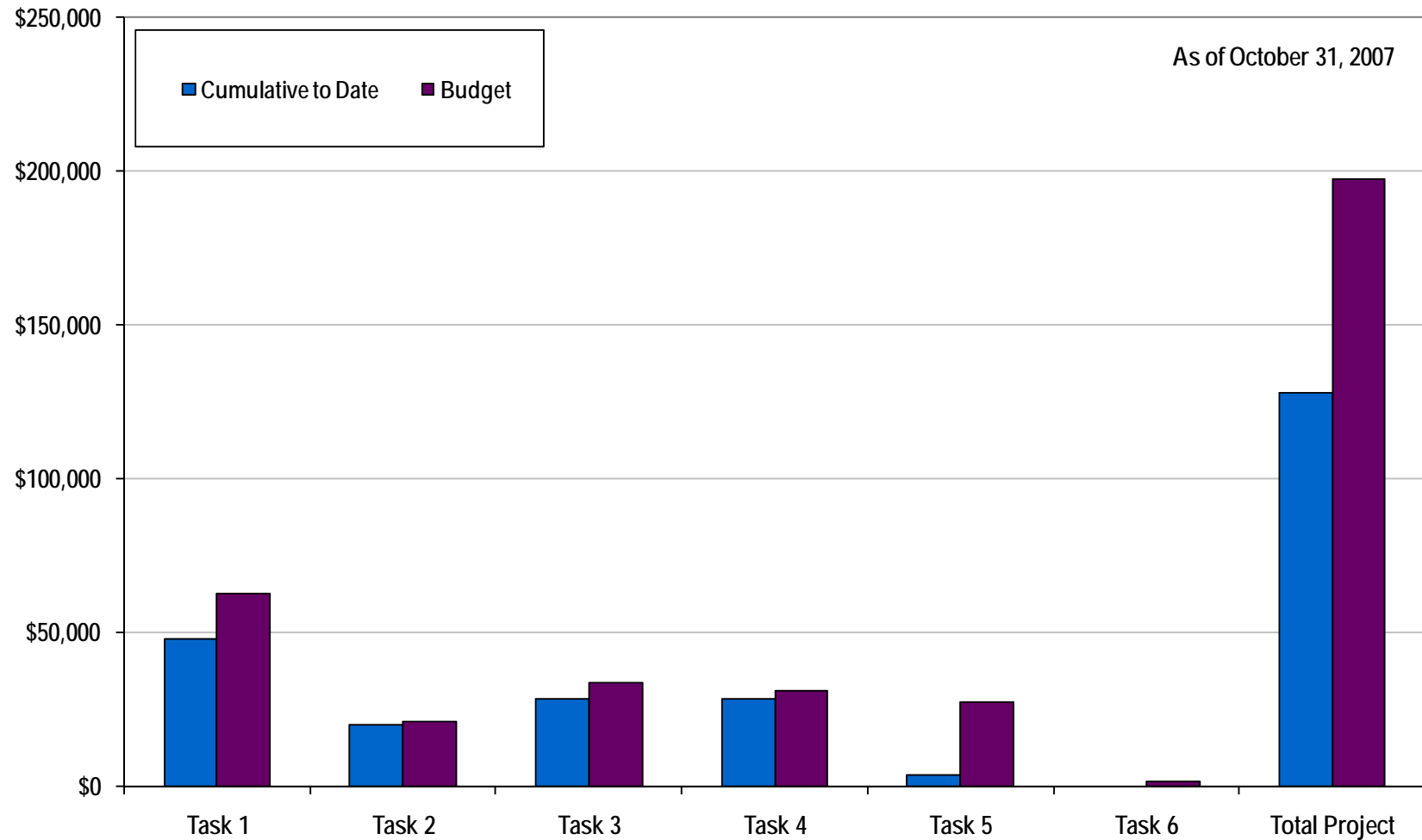


Figure 2. Cumulative Expenditures Versus Budget

